# ISOLATION OF MRSA FROM CANINE FOREMILK: A CASE OF HUMAN CONTAMINATION

Ada Rota[1], Patrizia Ponzio[1], Alessandro Starvaggi Cucuzza[1], Alessia Franco[2] and Michela Corrò[3]

[1]Dipartimento Scienze Veterinarie- Università di Torino

[2]Istituto Zooprofilattico Sperimentale delle Regioni Lazio e Toscana, Roma

[3]Istituto Zooprofilattico Sperimentale delle Venezie, Legnaro (PD)

Introduction- Staphylococci are commonly isolated from canine milk, both in case of healthy mammary glands and in case of infection (1,2). Among the coagulase-positive, potentially pathogen staphylococci, Staphylococcus pseudintermedius is the most represented species (1,3,4) while S. aureus has been only occasionally isolated (5). Case Report- We report the case of the isolation of a single S. aureus strain out of 145 bacteriological cultures of bitches foremilk and milk, compared to 66 isolates of S. pseudintermedius. S. aureus was isolated from the foremilk of a miniature poodle, privately owned, that had been subjected to Caesarean section. The bitch and her three puppies were healthy both at the moment of sampling and in the following days, growing normally until weaning. The isolated strain resulted methicillin-resistant and mecA positive (MRSA); besides being resistant to all beta-lactam antimicrobials it also showed resistance towards erythromycin and tetracycline. By genetic typing it resulted belonging to clonal complex 1 and showed the presence of SCCmec IVa. Following swabs from milk samples of the same bitch, collected at D7 and D15, did not yield S. aureus. Due to what we considered an anomalous isolation, we thought to investigate the operator who had sampled the dog, discovering that had suffered from recurrent tonsillitis: we asked him to collect a nasal and a pharyngeal swab: from the nasal swab, a MRSA, with the same clonal complex and SCCmec-type, was isolated. After the end of lactation, the bitch was sampled from axillary skin, mouth, perineal region, but no S. aureus was detected. Resistance to methicillin appeared in S. aureus in 1960 and originated because of widespread use of beta-lactam antibiotics in nosocomial settings. The CC1-SCCmec IV-MRSA isolates have become predominant since the 90s and are defined 'community-acquired' MRSA: they spread outside the hospitals, involving not only patients but also healthy contact persons. These methicillin-resistant strains often carry other genes associated with antimicrobial resistance, virulence-factors e.g. PVL and enterotoxin genes. The first reported PVL-positive SCCmec IV belonged to Clonal Complex 1 and caused fatal infections in children in the late 90s in the USA (6). The strain isolated in our investigation was negative for PVL genes. Conclusions- This case confirms the low prevalence of S. aureus in canine mammary secretions and it also shows that bacteriological samples have to be collected very accurately to avoid contamination.

1) Kuhn G, Pohl S, Hingst V. Berl Munch Tierarztl Wochenschr. 1991;104:130-3;
2) Walser K, Henschelchen O. Berl Munch Tierarztl Wochenschr. 1983;96:195-7;
3) Schäfer-Somi S, Spergser J et al. J Vet Med B Infect Dis Vet Public Health 2003;50:343-6;
4) Rota A, Milani C, Corró M et al. Reprod Dom Anim. 2013;48:1-6;
5) Sager M, Remmers C. Tierarztl Prax. 1990;18:415-9;
6) Monecke S, Coombs G, Shore A C et al. PLoS One 2011;6:e17936